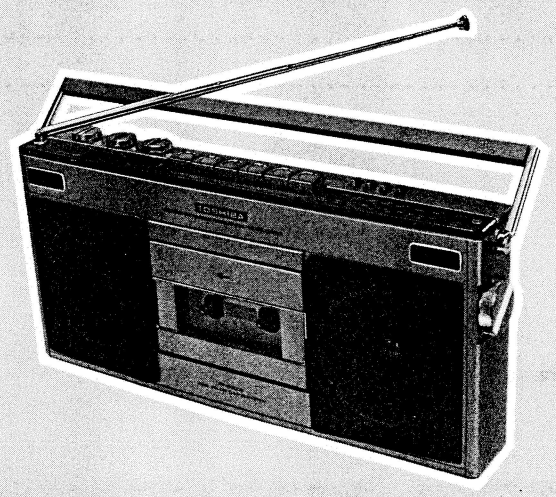
**SERVICE DATA**
**FILE NO. 110-208**

# TOSHIBA

## STEREO RADIO CASSETTE RECORDER

# RT-8000S



| SPECIFICATIONS | | | |
|---|---|---|---|
| Cassette Tape: | C-30, C-60, C-90, C-120 | Extension Speaker Jacks: | [EXT SP] jack x 2, Impedance 4 ohms |
| Tape Speed: | 4.8 cm/sec. | | [PHONES] jack (6.3 mm dia.) |
| Track System: | Four-track, two channel stereophonic | Power Source: | DC 12 V . . . . . ("C" size cell x 8) |
| Recording System: | AC bias (50 kHz) | | AC 220/240 V, 50 Hz (with AC Adaptor) |
| Erasing System: | Multipole magnet erasing | | External DC power (DC 12 V)(5.0 mm dia.) Center pin . . . Positive pole |
| Audio Frequency Response: | 60 Hz – 10 kHz | Power Consumption: | 18 W |
| Radio Frequency Range: | FM: 88 – 108 MHz | Dimensions (W x H x D): | 340 x 157 x 721 mm |
| | MW: 520 – 1605 kHz | Weight: | 2.7 kg (with dry batteries) |
| | LW: 145 – 270 kHz | Accessories: | AC Adaptor (TAC-81) . . 1 TE |
| Intermediate Frequency: | FM: 10.7 MHz, AM: 460 kHz | | AC Adaptor (TAC-82) . . 1 TU |
| Antenna: | FM: Telescopic antenna | | |
| | MW & LW: Ferrite core antenna | | |
| Speakers: | 92 mm (dia.) dynamic speaker x 2 | | |
| Microphone Jack: | [MIC] jack x 2, Impedance 2 k ohms | | |

Specifications are subject to change without notice.

TE, TU

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**Care of chipped P.C.Boards**

1. Don't make a vibration and shock on them.
2. Don't bend and twist them.
3. When repairing them, use a soldering iron at 200°C temperature.
4. Don't repair them more than required.

# 1. OPERATING CONTROLS

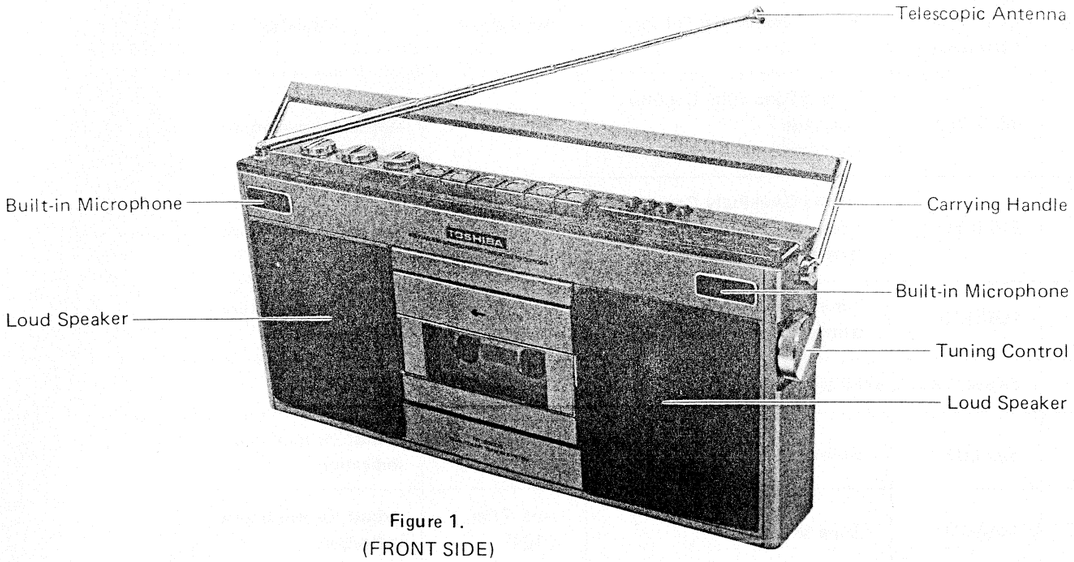


Figure 1.
(FRONT SIDE)

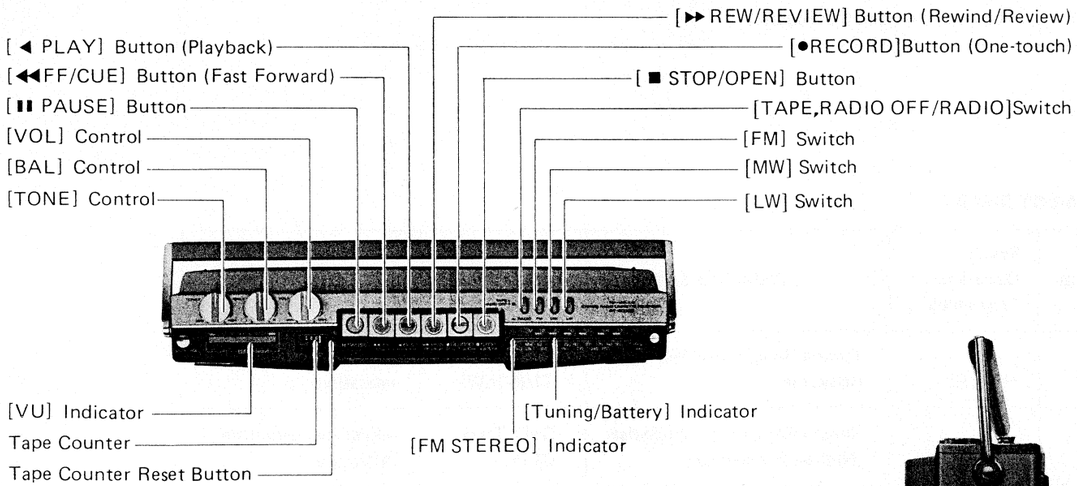


Figure 2.
(UPPER SIDE)

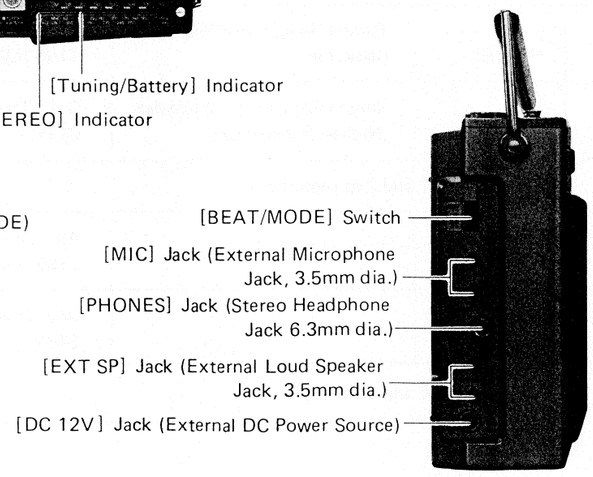
[BEAT/MODE] Switch
[MIC] Jack (External Microphone Jack, 3.5mm dia.)
[PHONES] Jack (Stereo Headphone Jack 6.3mm dia.)
[EXT SP] Jack (External Loud Speaker Jack, 3.5mm dia.)
[DC 12V] Jack (External DC Power Source)

Figure 3
(LEFT SIDE)



# 2. DISASSEMBLY INSTRUCTIONS

## FRONT CABINET REMOVAL

1. Remove the four knobs (TONE, BALANCE, VOLUME, TUNING) marked " * " and the battery cover.
2. Remove the six screws (A) to (D).
3. Holding the front side of this unit upwards, remove the front cabinet from the bottom side of it.
4. Disconnect the lead wires of speaker.

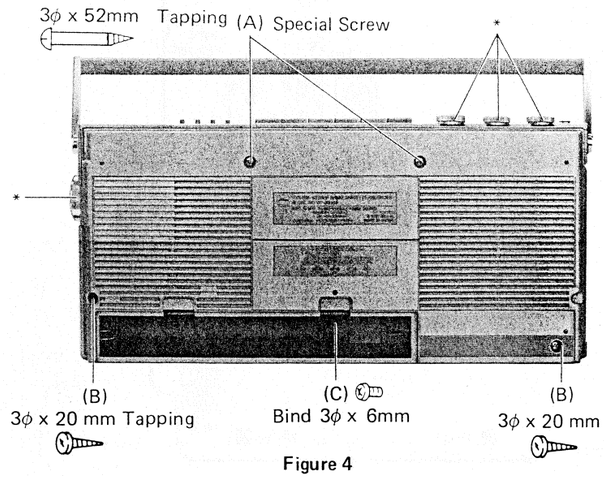


Figure 4

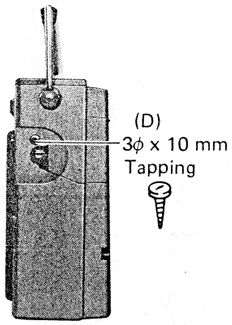


Figure 5

## MECHANICAL ASSEMBLY REMOVAL

1. Remove 2 screws (E).
2. Loosen the wire holder (F).
3. Separate the mechanical assembly from the back cabinet.

**CAUTION:** Take care of R/P head lead wires which are soldered on the main P.C. Board.

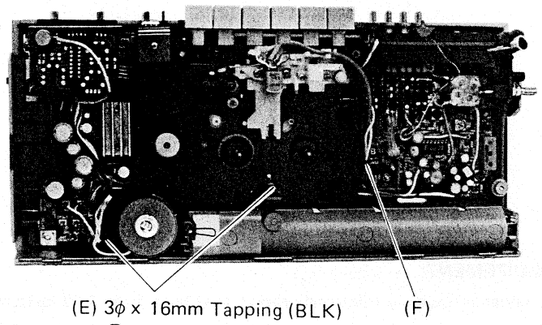


Figure 6

## MAIN P.C. BOARD REMOVAL

1. Remove 5 screws (G),(H) and(K).
2. Firstly, pulling out the radio portion of the main P.C. Board, remove the main P.C. Board.
3. Pull out the battery contact P.C. Board from the back cabinet and the main P.C. Board is separated completely.

***CAUTION:** Do not use a screw except for the specific (K) screw, because the back cabinet is damaged.

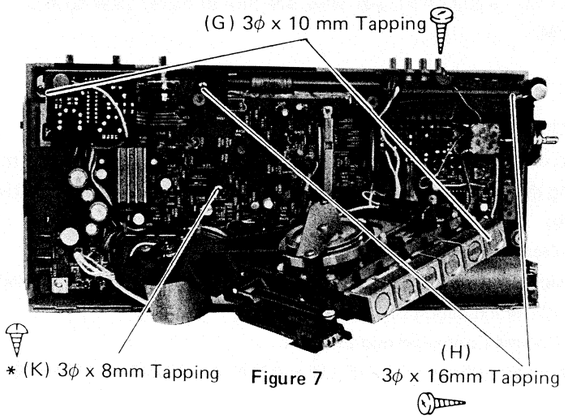


Figure 7

# 3. ALIGNMENT INSTRUCTIONS

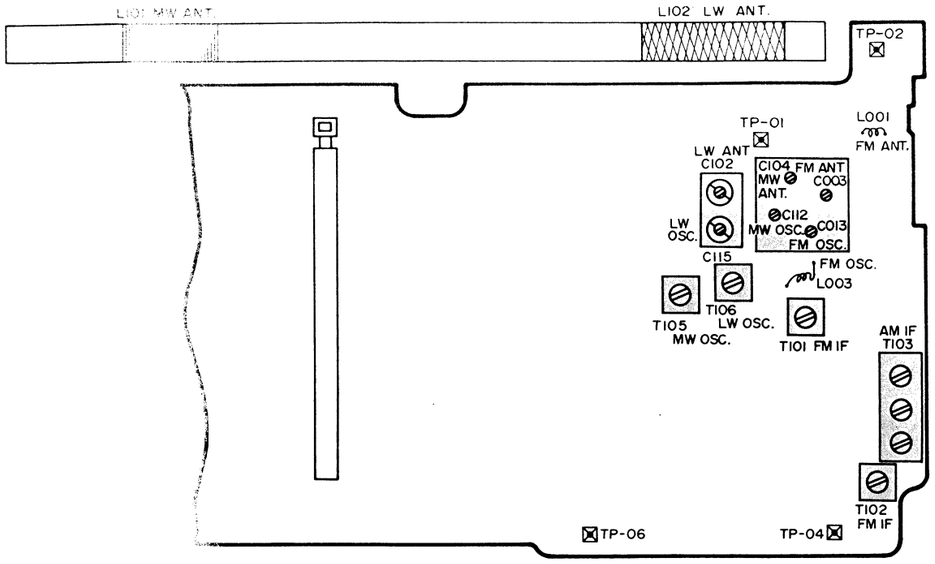


Figure 8

**TEST EQUIPEMENT**

1. Signal generator with a frequency range of at least from 140 MHz to 23 kHz AM.
2 Oscilloscope with a wide range amplifier of approximately 100 kHz
3 Test loop– a coil of any size wire, one turn or more. (MW &LW).
4 VTVM.

**AM ALIGNMENT**

1. Turn on the AM signal generator and the VTVM allowing a fifteen-minute warm-up period.
2. Using the test loop across the output of the signal generator, inductively connect the signal generator to the radio.
3. Connect the VTVM across the voice coil or an 4 ohm dummy load.
4. Set signal generator frequency as listed in ALIGNMENT CHART and maintain a sufficient output level to provide an indication on VTVM.
5. Set Volume Control at mid-position.
6. Proceed as outlined in the IF-LW and MW ALIGNMENT CHARTS.



MW ALIGNMENT CHART

| Band | Step | Signal Generator Frequency | Radio Dial Setting | Adjustment | Remarks |
|---|---|---|---|---|---|
| IF | 1 | 460 kHz | Tuning Gang Fully Counter-clockwise (Lowest Frequency) | T103 | Adjust for maximum indication. |
| MW | 2 | 510 kHz | Tuning Gang Fully Counter-clockwise (Lowest Frequency) | OSC. Coil T105 (MW) | Adjust for maximum indication. |
| | 3 | 1650 kHz | Tuning Gang Fully Clockwise (Highest Frequency) | OSC. Trim C112 | Adjust for maximum indication. |
| | 4 | Repeat steps 2 and 3 as required. | | | |
| | 5 | 600 kHz | Tune to Signal. | Ant. Coil L101 (MW) | Adjust for maximum indication. |
| | 6 | 1400 kHz | Tune to Signal. | Ant. Trim C104 | Adjust for maximum indication. |
| | 7 | Repeat steps 5 and 6 as required. | | | |

**LW ALIGNMENT CHART**

| Band | Step | Signal Generator Frequency | Radio Dial Setting | Adjustment | Remarks |
|---|---|---|---|---|---|
| LW | 1 | 142 kHz | Tuning Gang Fully Counter-clockwise | OSC. Coil T106 (LW) | Adjust for maximum indication. |
| | 2 | 280 kHz | Tuning Gang Fully Clockwise (Highest Frequency) | OSC. Trim C115 | Adjust for maximum indication. |
| | 3 | Repeat steps 1 and 2 as required. | | | |
| | 4 | 160 kHz | Tune to Signal. | Ant. Coil L102 (LW) | Adjust for maximum indication. |
| | 5 | 280 kHz | Tune to Signal. | Ant. Trim C102 | Adjust for maximum indication. |
| | 6 | Repeat steps 4 and 5 as required. | | | |

## FM-IF ALIGNMENT

1. Set the select switch to FM position.
2. Turn on both sweep generator and oscilloscope, and allow a fifteen-minute warm-up period.
3. Connect the RF SWEEP SIGNAL OUTPUT from the signal generator through the loop antenna to the receiver.
4. Connect the oscilloscope vertical input directly to the test point TUN OUT H and connect the shielded lead to the test point E or chassis ground.
5. Connect the SWEEP VOLTAGE OUTPUT of the sweep generator to the oscilloscope.
6. Proceed as outlined in the FM-IF ALIGNMENT CHART.

## FM-IF ALIGNMENT CHART

| Step | Signal coupling | Equip. | Tuning | Connection | Adjust. point | Pattern |
|---|---|---|---|---|---|---|
| 1 | Connect sweep generator output to a three-turn loop antenna of 10 cm diameter. | Sweep generator of 10.7 MHz center freq. with 10.7 MHz marker. | Tuning Knob fully counter-clockwise (Lowest Frequency). | Set scope for connecting output signal from TUN OUT to vertical axis of scope "V" and sweep generator output to horizontal axis "H". | T101<br>T102 | Turn the coil T102 fully counterclockwise-to obtain a single peak. Fig. 11<br>Adjust coil T101 in order until the best single peak is obtained.<br>Finally turn the coil T102 to obtain S curve. Fig. 12. |

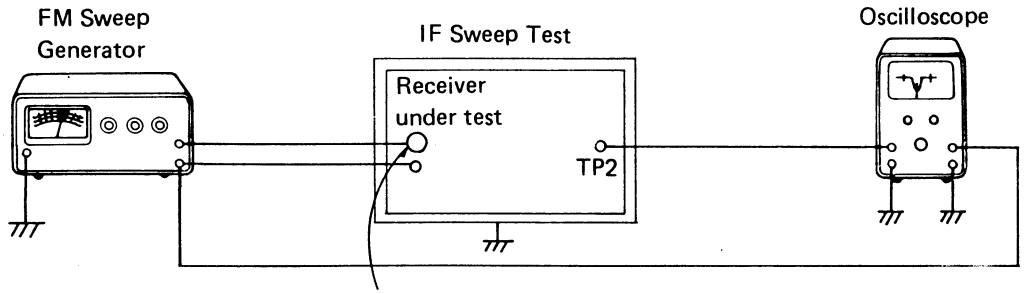


Figure 9

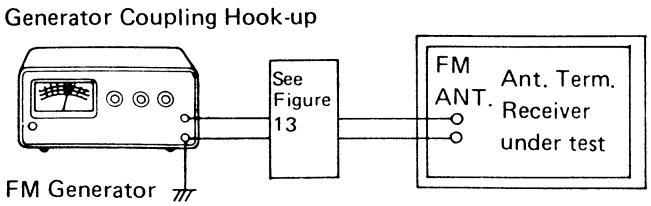


Figure 10

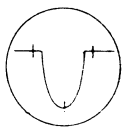

Figure 11

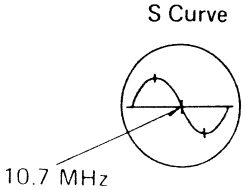


Figure 12

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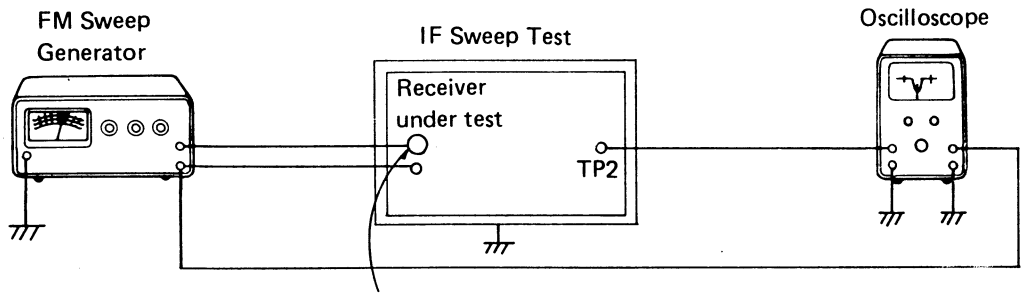


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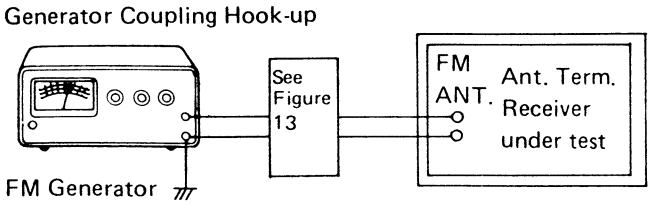


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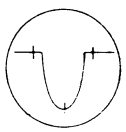

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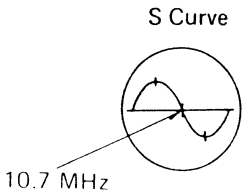


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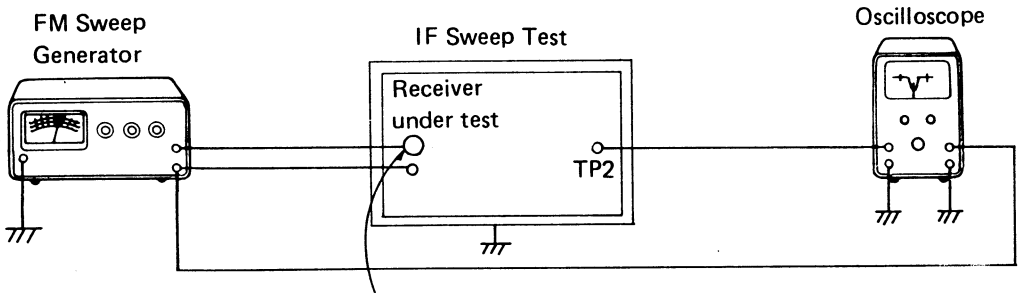


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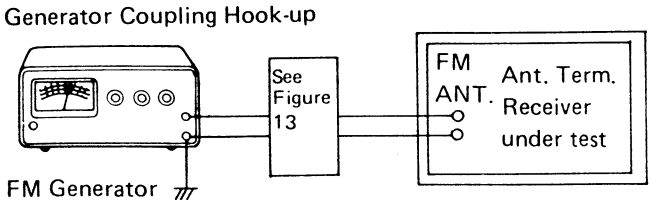


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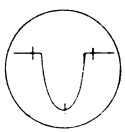

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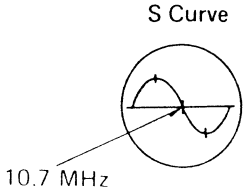


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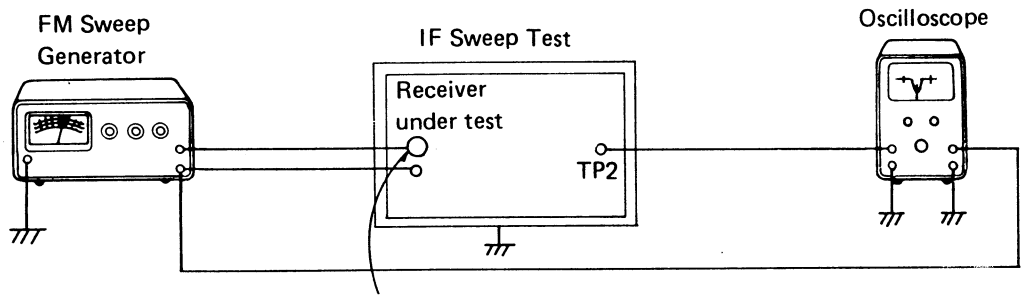


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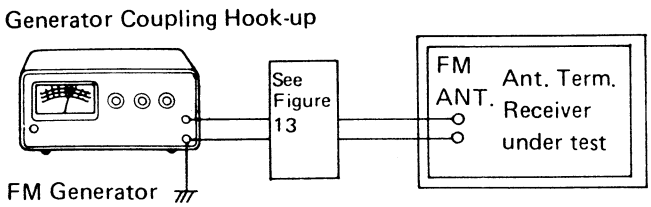


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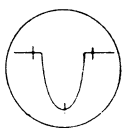

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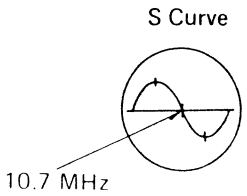



**Figure 12**

## FM-RF ALIGNMENT

1. Turn on the signal generator and the VTVM, and allow a fifteen-minute warm-up period.
2. Connect the signal generator output through a 75 ohm dummy antenna accross FM ANT.
3. Connect the VTVM across the voice coil or an 8 ohm dummy load.
4. Set the volume control to mid-position.
5. Adjust the signal generator frequency as indicated in FM-RF ALIGNMENT CHART, and maintain a sufficient signal output level to provide a measurable indication.
6. Proceed as outlined in the FM-RF ALIGNMENT CHART.

## FM-RF ALIGNMENT CHART

<table>
<tr><th>Step</th><th>Signal Generator</th><th>Radio Dial Setting</th><th>Adjustment</th><th>Remarks</th></tr>
<tr><td>1</td><td>87.5 MHz</td><td>Tuning Knob Fully Counterclockwise (Lowest Frequency)</td><td>OSC. Coil L003</td><td>Adjust for maximum output indication.</td></tr>
<tr><td>2</td><td>105 MHz</td><td>Tuning Knob Fully Clockwise (Highest Frequency)</td><td>OSC. Trim C103</td><td>Adjust for maximum output indication.</td></tr>
<tr><td>3</td><td colspan="4">Repeat steps 1 and 2 as required.</td></tr>
<tr><td>4</td><td>90 MHz</td><td rowspan="2">Tune to Signal.</td><td>Ant. Coil L001</td><td rowspan="2">Adjust for maximum output indication.</td></tr>
<tr><td>5</td><td>102 MHz</td><td>Ant. Trim C003</td></tr>
<tr><td>6</td><td colspan="4">Repeat steps 4 and 5 as required.</td></tr>
</table>

## FREE RUN FREQUENCY ALIGNMENT

Adjust R202 under no signal condition so as to obtain 76KHz ± 150Hz

**CAUTION:** When religning the FM Receiving Frequency, the lowest side of the frequency range must not be below 87.5 MHz in order to comply with FTZ regulations in West Germany.

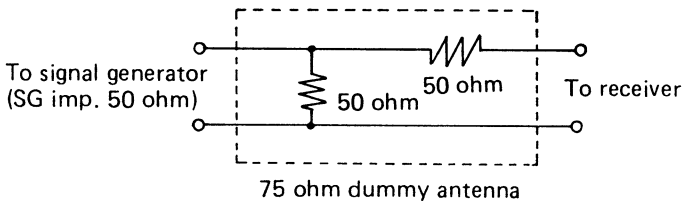



Figure 13

## RECORD/PLAYBACK HEAD ADJUSTMENT

A 6.3 kHz standard tape must be used for this adjustment. Connect a VTVM or an oscilloscope to the EXT Speaker jack and adjust the azimuth by using a phillips screwdriver to maintain the maximum output voltage.

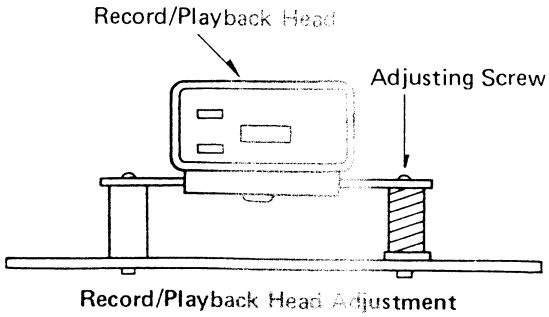
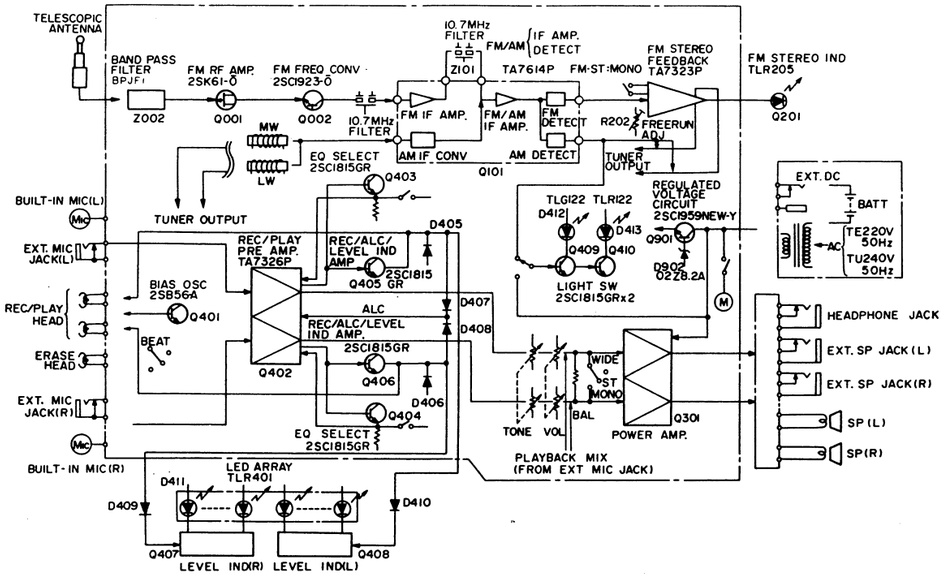


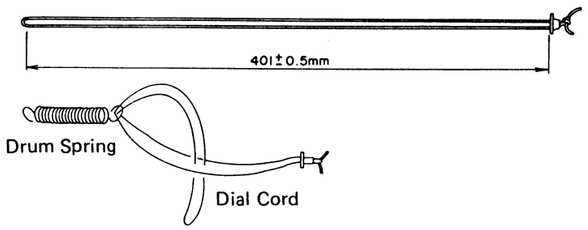

Figure 14

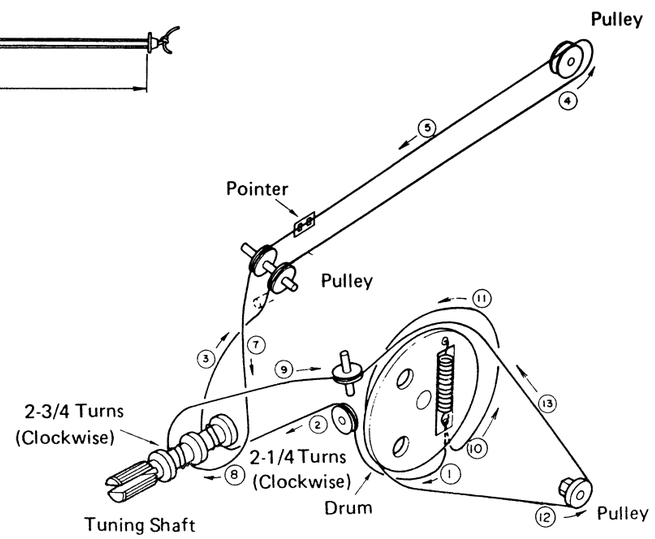
# 4. BLOCK DIAGRAM




# 5. DIAL CORD RESTRINGING

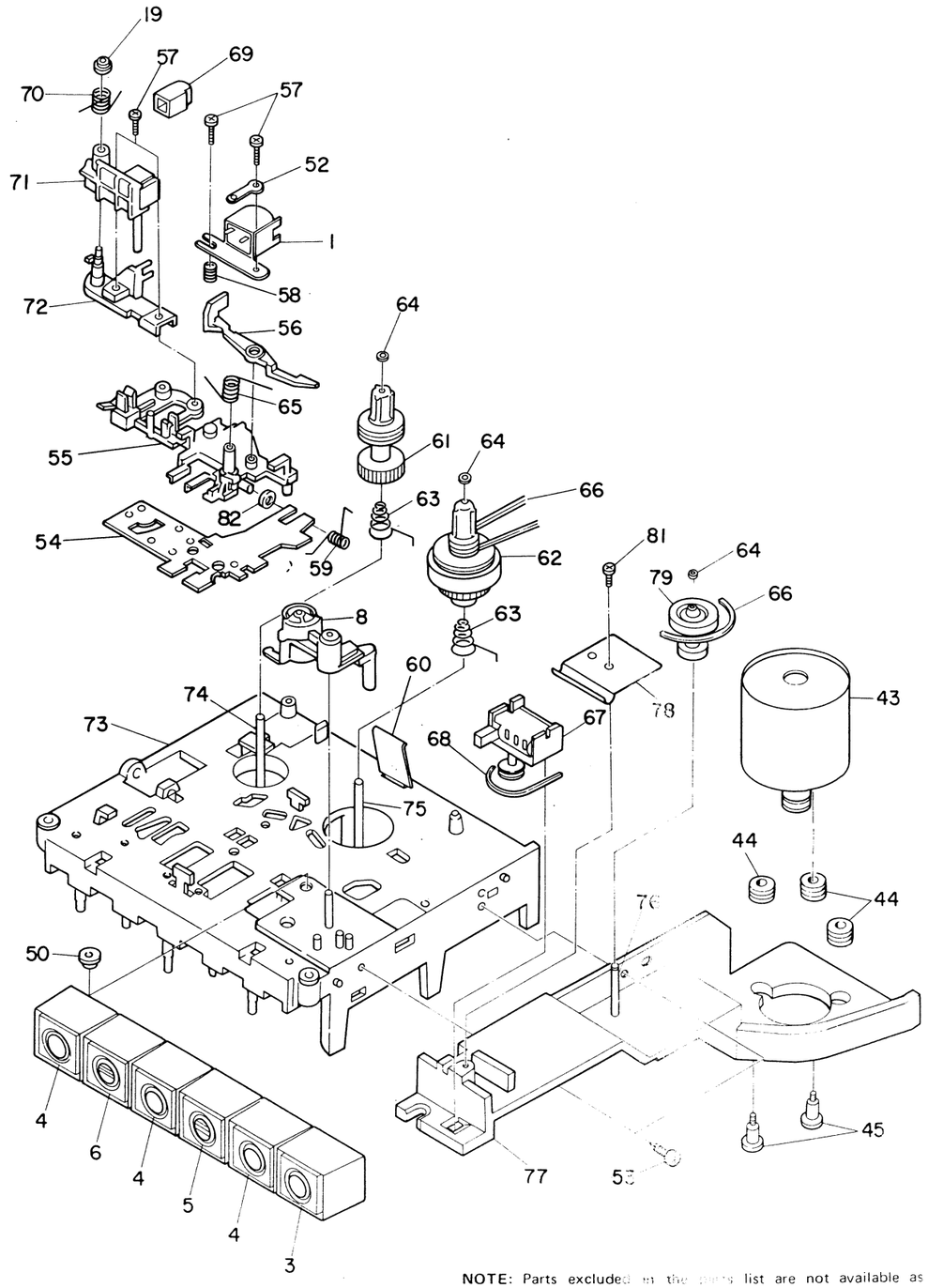
1. Turn the shaft of the variable capacitor fully clockwise.
2. Fix the drum to the variable capacitor and thread the dial cord through the hole of drum.
3. Start from ① to ⑧ in sequence cord pulling the dial cord at ⑨, wind it from ⑩ in the arrow direction and then set it on the drum drain at ⑬.
4. Hook the spring on the drum hole.



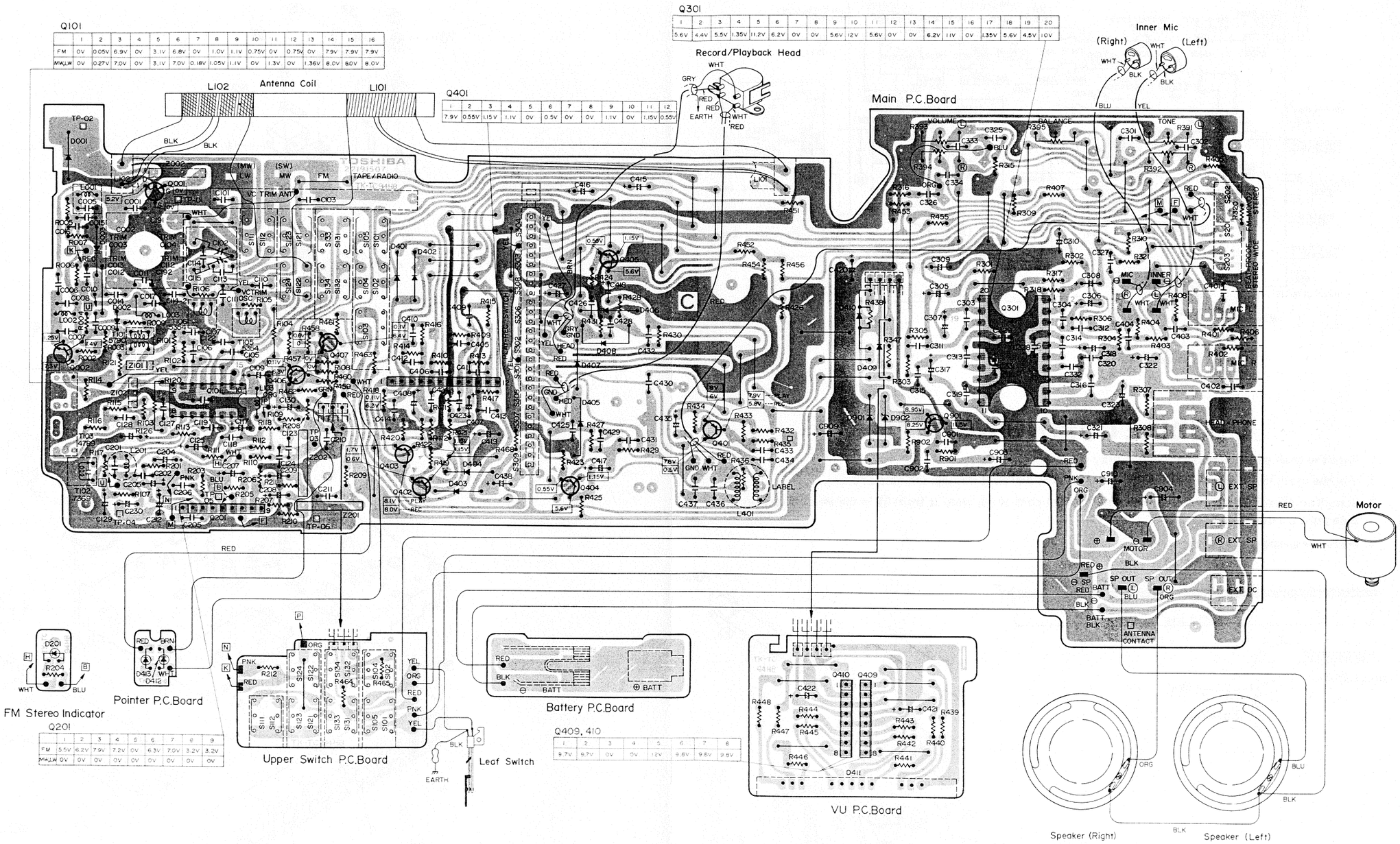



# 6-1. MECHANICAL EXPLODED VIEW (UPPER)

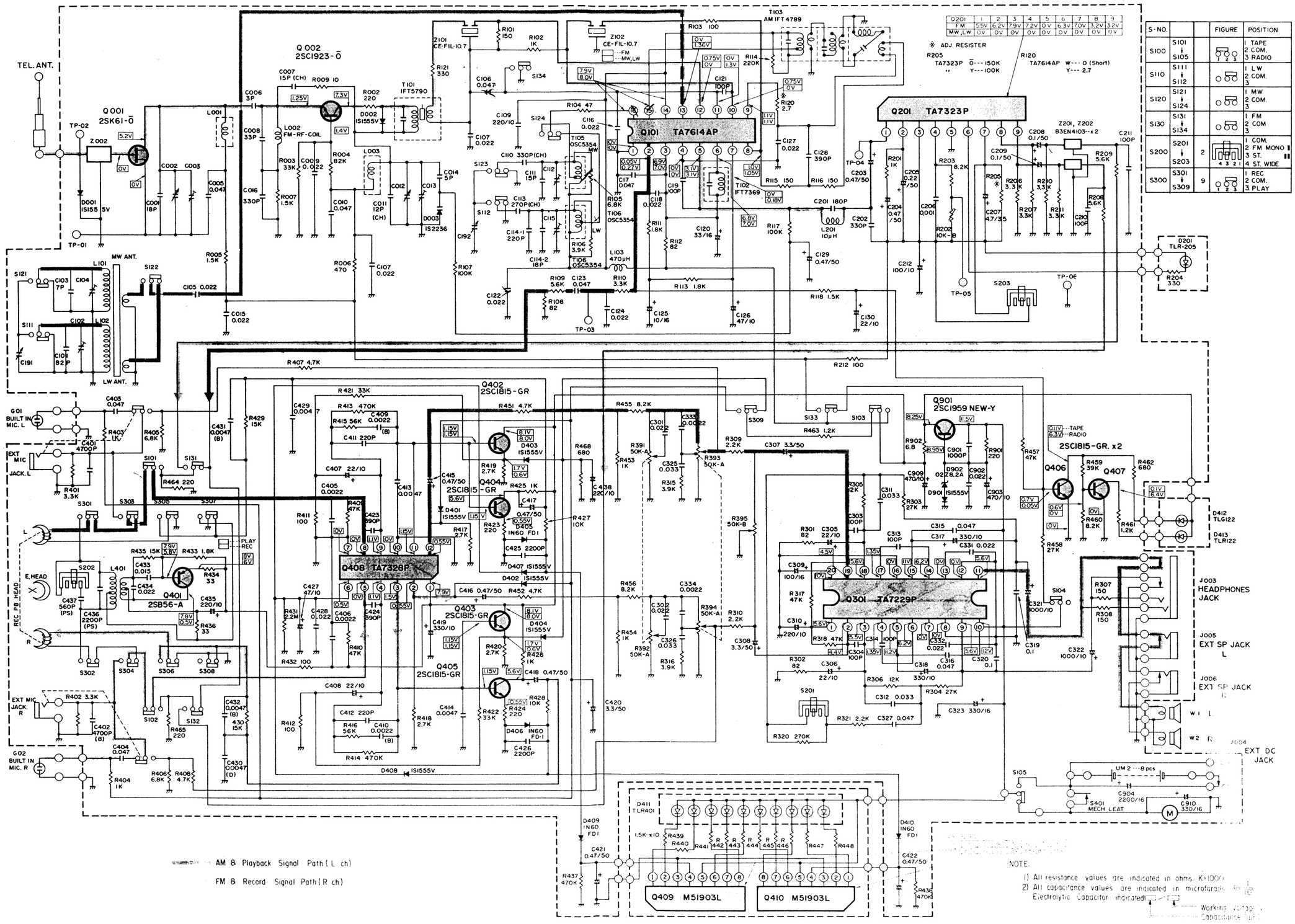



NOTE: Parts excluded in the parts list are not available as replacement parts.

# 7. ELECTRICAL PARTS LOCATIONS

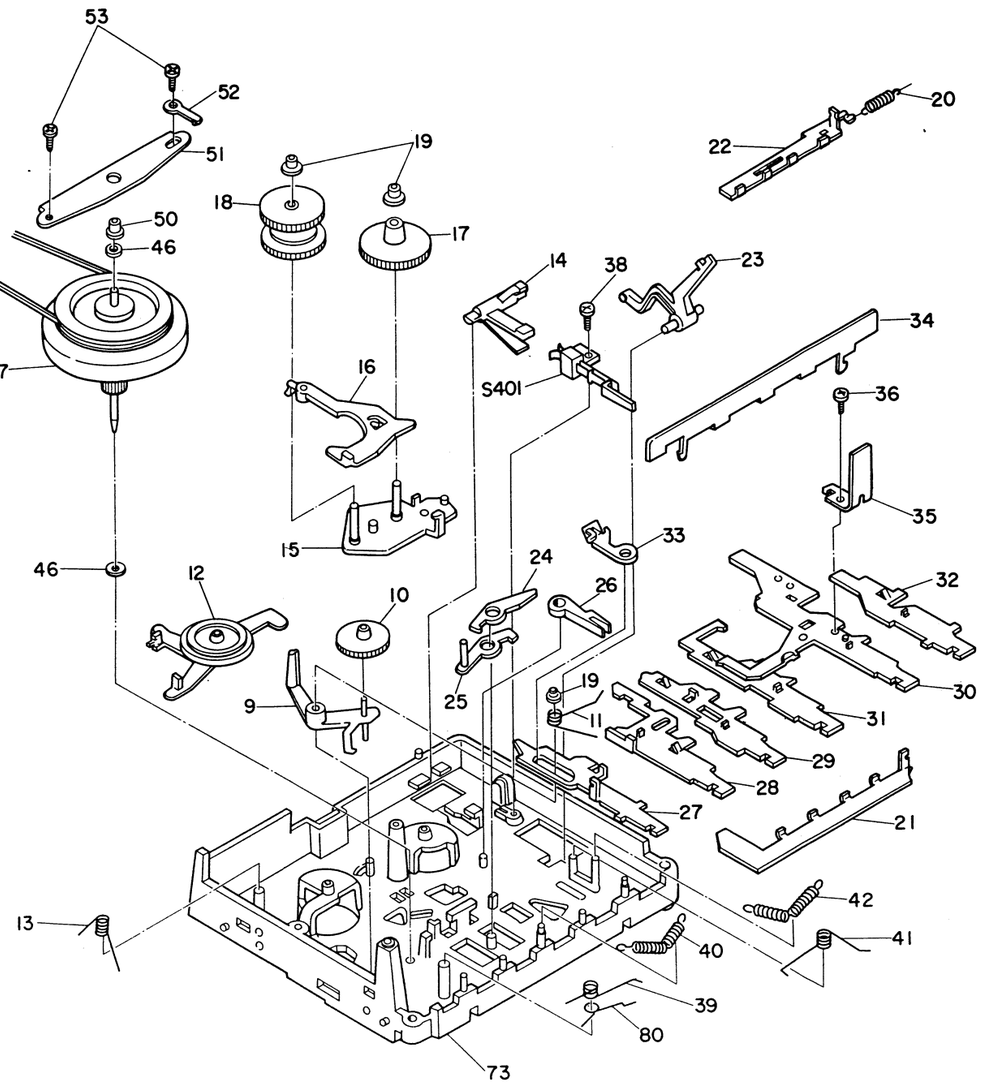


# 8. SCHEMATIC DIAGRAM




| S-NO. | | | FIGURE | POSITION |
|---|---|---|---|---|
| S100 | S101 ↓ S105 | 9 | 1 2 3 | 1 TAPE 2 COM. 3 RADIO |
| S110 | S111 ↓ S112 | | 1 2 3 | 1 LW 2 COM. 3 |
| S120 | S121 ↓ S124 | | 1 2 3 | 1 MW 2 COM. 3 |
| S130 | S131 ↓ S134 | | 1 2 3 | 1 FM 2 COM 3 |
| S200 | S201 ↓ S203 | 2 | 4 3 2 1 | 1 COM. 2 FM MONO 3 ST. 4 ST. WIDE |
| S300 | S301 ↓ S309 | | 1 2 3 | 1 REC 2 COM. 3 PLAY |

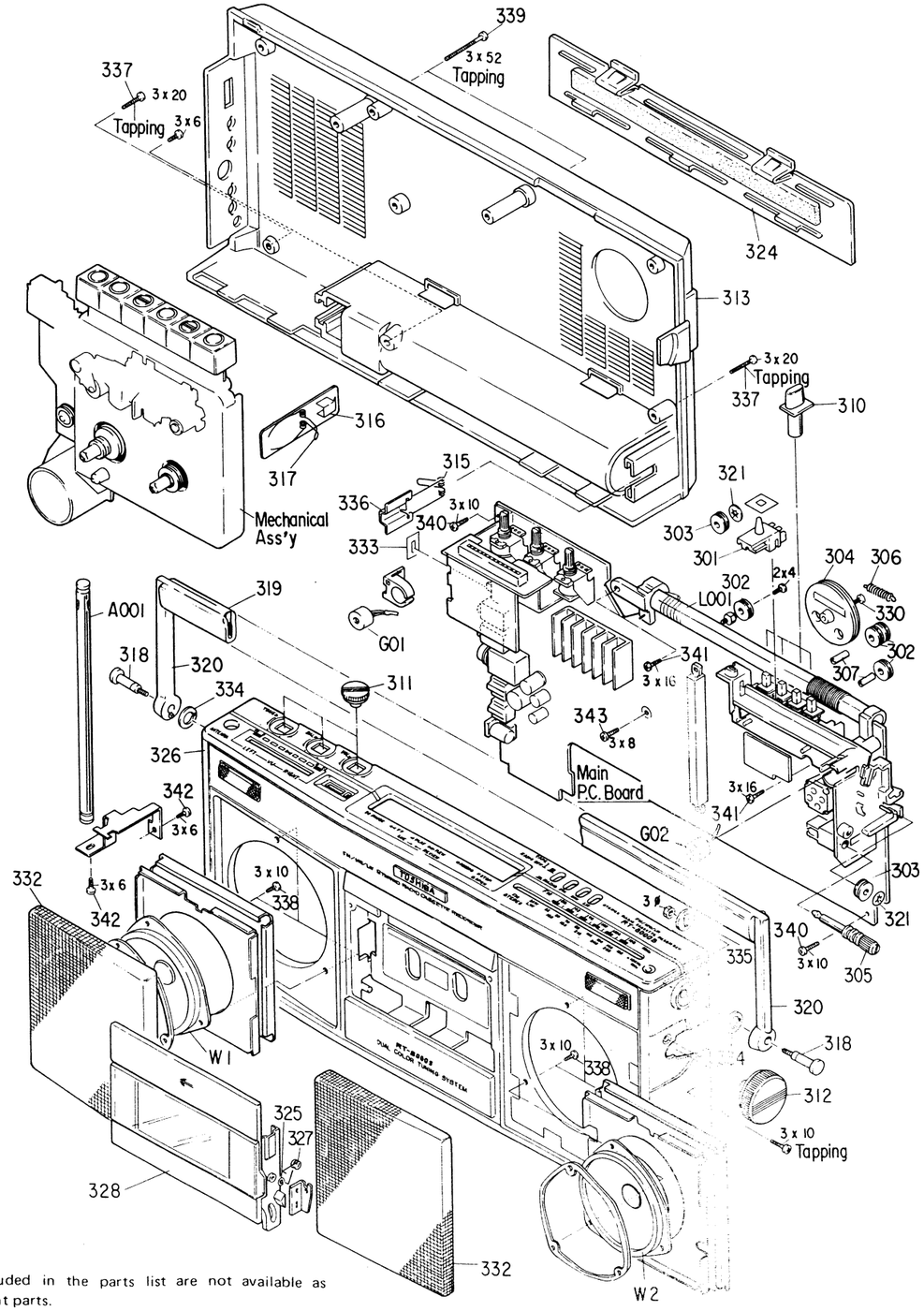
# 6-2. MECHANICAL EXPLODED VIEW (LOWER)




**NOTE:** Parts excluded in the parts list are not available as replacement parts.



# 9. CABINET EXPLODED VIEW




**NOTE:** Parts excluded in the parts list are not available as replacement parts.

# 10. PARTS LIST

| Symbol No. | Part No. | Description |
|---|---|---|
| | | **MECHANISM** |
| 1 | 22217294 | Head, Record/playback, HRPT-43 |
| 3 | 25816558 | Button, Pause |
| 4 | 25816555 | Button, FF, REW, STOP/OPEN |
| 5 | 25816556 | Button, Play |
| 6 | 25816557 | Button, Record |
| 8 | 25717392 | Pressure Roller |
| 9 | 25782247 | Lever, ASO |
| 10 | 25756178 | Gear, ASO |
| 11 | 25773367 | Spring, ASO Lever |
| 12 | 25719495 | Mount Ass'y, Idler |
| 13 | 25773370 | Spring, Idler Mount |
| 14 | 25782248 | Lever, Record Lock |
| 15 | 25782251 | Lever, Rewind |
| 16 | 25782252 | Lever, Fast Forward |
| 17 | 25756179 | Gear, High Speed |
| 18 | 25719491 | Gear Ass'y |
| 19 | 25783195 | Bushing |
| 20 | 25771617 | Spring, Rewind Lever |
| 23 | 25782253 | Lever, Operation Plate |
| 24 | 25782250 | Lever, Review |
| 25 | 25782294 | Lever, Cue |
| 26 | 25782275 | Lever, Record Lock |
| 33 | 25782173 | Lever, Pause Lock |
| 36 | 22707170 | Screw, TTBID 2.6$\phi$x5mm |
| 38 | 22701326 | Screw, Tapping, BID 3$\phi$x8mm |
| 39 | 25773368 | Spring A, Operation Plate |
| 40 | 25771956 | Spring C, Operation Plate |
| 41 | 25773369 | Spring B, Operation Plate |
| 42 | 25771955 | Spring, Look Plate |
| 43 | 25791021 | Motor Ass'y |
| 44 | 25761327 | Cushion, Motor |
| 45 | 22707296 | Screw, 2.6$\phi$x18mm, Motor |
| 46 | 25764398 | Washer, 2.5$\phi$ |
| 47 | 25717391 | Flywheel Ass'y |
| 49 | 25755328 | Belt, Drive |
| 50 | 25725340 | Holder |
| 53 | 22707301 | Screw, Tapping, BID 2.6$\phi$x8mm |
| 55 | 25783194 | Head Mount |
| 56 | 25782249 | Lever, Detector |
| 57 | 22707322 | Screw, BID 2$\phi$x10mm |
| 58 | 25772479 | Spring, Azimuth |
| 59 | 22773365 | Spring, Head Slider |
| 61 | 25754338 | Hub Plate, Supply |
| 62 | 25712348 | Hub Plate, Take-up |
| 63 | 25772515 | Spring, Back Tension |
| 64 | 25764549 | Washer, 1.7$\phi$ |
| 65 | 25773366 | Spring, Pressure Roller |
| 66 | 25755243 | Belt, Counter |
| 67 | 25873202 | Counter |
| 68 | 25755404 | Belt, Counter |
| 69 | 22218181 | Head, Erase, HET-25 |
| 70 | 25773272 | Spring, Erase Head Lever |
| 71 | 25782172 | Lever, Erase Head |
| 72 | 25783143 | Guide, Erase Head |
| 79 | 25758017 | Pulley, Middle |
| 80 | 25773405 | Spring, Click |
| | | **CABINET PARTS** |
| 301 | 22741291 | Pointer |
| 302 | 22742016 | Pulley |
| 303 | 22742110 | Pulley |
| 304 | 22742222 | Dial Drum |
| 305 | 22743238 | Tuning Shaft |
| 306 | 22771589 | Spring, Drum |
| 307 | 22743215 | Pulley Shaft |
| 310 | 25837290 | Knob, Push Switch |
| 311 | 25837254 | Knob, Volume/Balance/Tone |
| 312 | 25837255 | Knob, Tuning |
| 313 | 25817683 | Cabinet Back Ass'y |
| 315 | 25779015 | Spring A. Battery |
| 316 | 25839248 | Plate , Battery |
| 317 | 25772510 | Spring , Battery |
| 318 | 25835389 | Shaft, Handle |
| 319 | 25835387 | Cover, Handle |
| 320 | 25835388 | Handle |
| 321 | 22702125 | Push Nut, 2.4$\phi$ |
| 323 | 25844040 | Spring, Holder |
| 324 | 25817429 | Battery Cover Ass'y |
| 325 | 25735166 | Washer, 3$\phi$ |
| 326 | 25817509 | Cabinet Front Ass'y |
| 327 | 25773196 | Spring, Cassette |
| 328 | 25817428 | CassetteCover Ass'y |
| 329 | 25858260 | Cushion |
| 330 | 22707037 | Screw, BID 3 6$\phi$x6mm |
| 331 | 22707163 | Screw, BID 3$\phi$x10mm |
| 332 | 25823277 | Net, Speaker |
| 334 | 25835379 | Spacer, Handle |
| 335 | 25835396 | Washer, Handle |
| 336 | 25839249 | Plate, Battery |
| 337 | 22707435 | Screw, BID 3$\phi$ x 20mm, Tapping |
| 338 | 22707235 | Screw, PAN 3$\phi$ x 10mm. |
| 339 | 22707436 | Screw, BID 3$\phi$ x 52mm, Tapping |
| 340 | 22707116 | Screw, BID 3$\phi$ x 10mm, Tapping |
| 341 | 22707266 | Screw, BID 3$\phi$ x 16mm Tapping |
| 342 | 22701457 | Screw, BID 3$\phi$ x 6mm |
| 343 | 22701326 | Screw, BID 3$\phi$ x 8mm, Tipping |
| | 22950951 | Label, Caution for TU |

| Symbol No. | Part No. | Description |
|---|---|---|
| **TRANSISTORS, ICS & DIODES** | | |
| Q001 | | Transistor, 2SK61-0 |
| Q002 | | Transistor, 2SC1923-0 |
| Q101 | | IC, TA7614AP |
| Q201 | | IC, TA7323P |
| Q301 | | IC, TA7229P |
| Q401 | | Transistor, 2SB56-A |
| Q402, 403 404, 405 406, 407 | | Transistor, 2SC1815NEW-GR |
| Q408 | | IC, TA7328P |
| Q409, 410 | 22114634 | IC, M51903L |
| Q901 | | Transistor, 2SC1959NEW-Y |
| D001, 401 402, 403 404, 407 901 | | Diode, 1S1555V, TP |
| D002, 408 | | Diode, 1S1555V |
| D003 | | Diode, 1S2236 |
| D201 | | Diode, TLR205, Light Emitting |
| D405, 406 409, 410 | | Diode, 1N60 FD1 (LC) |
| D411 | | Diode, TLR401, Light Emitting |
| D412 | | Diode, TLG122, Light Emitting |
| D413 | | Diode, TLR122, Light Emitting |
| D902 | | Diode, 02Z8.2A |
| **COILS & TRANSFORMERS** | | |
| L001 | 22294391 | Coil, FM, RF |
| L002 | 22294361 | Coil, FM, RF |
| L003 | 22294019 | Coil, FM, LR-8404L |
| L101, 102 | 22242763 | Coil, Antenna, FA32D2763, MW, LW |
| L013 | 22230106 | Coil, 470$\mu$H |
| L201 | 22232193 | Coil, Tape, 10mH |
| C401 | 22235164 | Coil, Oscillator, Tape |
| T101 | 22265790 | Coil, IFT, IT16S5790, FM |
| T102 | 22267369 | Coil, IFT, IT16S7369, FM |
| T103, 104 | 22264789 | Coil, IFT, IT15S4789, AM |
| T105, 106 | 22245354 | Coil, Oscillator, RT72-5354 |
| **ELECTRICAL PARTS** | | |
| S100, 110 120, 130 | 22195370 | Swtich, Push |
| S200 | 22195371 | Switch, Slide |
| S300 | 22195323 | Switch, Slide, Record/Playback |

| Symbol No. | Part No. | Description |
|---|---|---|
| Z002 | 32137760 | Filter, FM, RF |
| Z101, 102 | 22153058 | Filter, Ceramic |
| Z201, 202 | 22153078 | Filter, MPX |
| J001, 002 | 22163667 | Jack, 3.5$\phi$-S |
| J003 | 22163651 | Jack, Headphone, 6$\phi$ |
| J004 | 22163721 | Jack, DC, Power |
| J005, 006 | 22163666 | Jack, 3.5$\phi$ |
| W1, 2 | 22152248 | Speaker, SP-09F8A |
| A001 | 22124476 | Telescopic Antenna |
| G01, 02 | 22154212 | Microphone Unit |
| **CAPACITORS** D=±5pF, J=±5%, K=±10%, M=±20%, Z=+80% −20%, NP=Non-Polarity | | |
| C002, 012 191, 192 | 22308550 | Variable, VC-4-20/335 |
| C102, 104 | 22309149 | Trimmer, CON2R |
| C001 | 22361180 | Ceramic, 18pF 50V, J |
| C005 | 22342473 | Ceramic, 0.047mfd 50V, Z |
| C006 | 22361309 | Ceramic, 3pF 50V, D |
| C007 | 22361150 | Ceramic, 15pF 50V, J (CH) |
| C008 | 22361330 | Ceramic, 33pF 50V, J |
| C009 | 22342223 | Ceramic, 0.022mfd 50V, Z |
| C010 | 22342473 | Ceramic, 0.047mfd 50V, Z |
| C011 | 22361150 | Ceramic, 15pF 50V, J (CH) |
| C014 | 22361509 | Ceramic, 5pF 50V, D |
| C015 | 22342223 | Ceramic, 0.022mfd 50V, Z |
| C016 | 22361331 | Ceramic, 330pF 50V, J |
| C017 | 22342223 | Ceramic, 0.022mfd 50V, Z |
| C101 | 22361820 | Ceramic, 2pF 50V, J |
| C103 | 22361709 | Ceramic, 7pF 50V |
| C105 | 22342223 | Ceramic, 0.022mfd 50V, Z |
| C106 | 22342473 | Ceramic, 0.047mfd 50V, Z |
| C107 | 22342223 | Ceramic, 0.022mfd 50V, Z |
| C109 | 22443221 | Electrolytic, 220mfd 10V |
| C110 | 22361331 | Ceramic, 330pF 50V, J (CH) |
| C111 | 22361150 | Ceramic, 15pF 50V, J |
| C113 | 22361271 | Ceramic, 270pF 50V, J (CH) |
| C114-1 | 22361221 | Ceramic, 220pF 50V, J |
| -2 | 22361180 | Ceramic, 18pF 50V, J |
| C116 | 22342223 | Ceramic, 0.022mfd 50V, Z |
| C117 | 22342473 | Ceramic, 0.047mfd 50V, Z |
| C118 | 22342223 | Ceramic, 0.022mfd 50V, Z |
| C119 | 22361101 | Ceramic, 100pF 50V, J |
| C120 | 22445330 | Electorlytic, 3mfd 16V |
| C122 | 22342223 | Ceramic, 0.022mfd 50V, Z |
| C123 | 22342473 | Ceramic, 0.047mfd 50v, Z |
| C124 | 22342223 | Ceramic, 0.022mfd 50V, Z |

| Symbol No. | Part No. | Description |
|---|---|---|
| C125 | 22445100 | Electrolytic, 10mfd 16V |
| C126 | 22443470 | Electrolytic, 47mfd 10V |
| C127 | 22342223 | Ceramic, 0.022mfd 50V, Z |
| C128 | 22361391 | Ceramic, 390pF 50V, J |
| C129 | 22448478 | Electrolytic, 0.047mfd 50V |
| C130 | 22443220 | Electrolytic, 22mfd 10V |
| C201 | 22361181 | Ceramic, 180pF 50V, J |
| C202 | 22361331 | Ceramic, 330pF 50V, J |
| C203 | 22448478 | Electrolytic, 0.47mfd 50V |
| C204 | 22448478 | Electrolytic, 0.47mfd 50V |
| C205 | 22440184 | Electrolytic, 0.22mfd 50V, M |
| C206 | 22349102 | Ceramic, 0.001mfd 50V, K |
| C207 | 22447479 | Electrolytic, 4.7mfd 50V |
| C208 | 22440183 | Electrolytic, 0.1mfd 50V, M |
| C209 | 22440183 | Electrolytic, 0.1mfd 50V, M |
| C210 | 22361101 | Ceramic, 100pF 50V, J |
| C211 | 22361101 | Ceramic, 100pF 50V, J |
| C212 | 22443101 | Electrolytic, 100mfd 10V |
| C301, 302 | 22349223 | Ceramic, 0.022mfd 25V, K |
| C303, 304 | 22361101 | Ceramic, 100pF 50V, J |
| C305, 306 | 22443220 | Electrolytic, 22mfd 10V |
| C307, 308 | 22448339 | Electrolytic, 3.3mfd 50V |
| C309 | 22480001 | Electrolytic, 100mfd 10V |
| C310 | 22440249 | Electrolytic, 22mfd 16V |
| C311, 312 | 22349473 | Ceramic, 0.047mfd 25V, K |
| C313, 314 | 22361101 | Ceramic, 100pF 50V, J |
| C315, 316 | 22342473 | Ceramic, 0.047mfd 50V, Z |
| C317, 318 | 22443331 | Electrolytic, 330mfd 10V |
| C319, 320 | 22342104 | Ceramic, 0.1mfd 50V, Z |
| C321, 322 | 22440282 | Electrolytic, 1000mfd 10V |
| C323 | 22440262 | Electrolytic, 330mfd 16V |
| C325, 326 | 22340142 | Ceramic, 0.047mfd 25V, K |
| C327 | 22340117 | Ceramic, 0.047mfd 50V, Z |
| C331, 332 | 22340115 | Ceramic, 0.022mfd 50V, Z |
| C333, 334 | 22340130 | Ceramic, 0.0022mfd 50V, K |
| C401, 402 | 22340132 | Ceramic, 4700pF 50V, K |
| C403, 404 | 22340117 | Ceramic, 0.047mfd 50V, Z |
| C405, 406 | 22340144 | Ceramic, 0.0022mfd 50V, M |
| C407, 408 | 22443220 | Electrolytic, 22mfd 10V |
| C409, 410 | 22340130 | Ceramic, 0.0022mfd 50V, K |
| C411, 412 | 22360439 | Ceramic, 220pF 50V, J |
| C413, 414 | 22340132 | Ceramic, 0.0047mfd 50V, K |
| C415, 416 | 22448478 | Electrolytic, 0.47mfd 50V |
| C417, 418 | 22448478 | Electrolytic, 0.47mfd 50V |
| C419 | 22440258 | Electrolytic, 330mfd 10V |
| C420 | 22448339 | Electrolytic, 3.3mfd 50V |
| C421, 422 | 22448478 | Electrolytic, 0.47mfd 50V |
| C423, 424 | 22360442 | Ceramic, 390pF 50V, J |
| C425, 426 | 22340144 | Ceramic, 2200pF 50V, M |
| C427 | 22443470 | Electrolytic, 47mfd 10V |
| C428 | 22340115 | Ceramic, 0.022mfd 50V, Z |
| C429, 430 | 22340143 | Ceramic, 0.001mfd 50V, M |
| C431, 432 | 22340132 | Ceramic, 0.0047mfd 50V, K |
| C433 | 22340134 | Ceramic, 0.015mfd 50V, M |
| C434 | 22340141 | Ceramic, 0.022mfd 25V, K |
| C435 | 22480002 | Electrolytic, 220mfd 10V |
| C436 | 22321061 | Polypropylene, 22000pF 50V, J |
| C437 | 22321054 | Polypropylene, 560pF 50V, J |
| C438 | 22480002 | Electrolytic, 220mfd 10V, M |
| C901 | 22340143 | Ceramic, 1000pF 50V, M |
| C902 | 22340115 | Ceramic, 0.022mfd 50V, Z |
| C903 | 22483471 | Electrolytic, 470mfd 10V, M |
| C904 | 22440304 | Electrolytic, 2200mfd 16V |
| C909 | 22483471 | Electrolytic, 470mfd 10V, M |
| C910 | 22440262 | Electrolytic, 330mfd 10V |

**RESISTORS**

All resistors are carbon film 1/8W, ±5%, unless otherwise noted. K=1000 M=1000,000

| | | |
|---|---|---|
| R002 | 22555221 | 220 ohm |
| R003 | 22555333 | 33k ohm |
| R004 | 22555823 | 82k ohm |
| R005 | 22555152 | 1.5k ohm |
| R006 | 22555471 | 470 ohm |
| R007 | 22555152 | 1.5k ohm |
| R009 | 22555100 | 10 ohm |
| R101 | 22555151 | 150 ohm |
| R102 | 22555102 | 1k ohm |
| R103 | 22555101 | 100 ohm |
| R104 | 22545470 | 47 ohm, ¼W |
| R105 | 22555682 | 6.8k ohm |
| R106 | 22555392 | 3.9k ohm |
| R107 | 22555104 | 100k ohm |
| R108 | 22555820 | 82 ohm |
| R109 | 22555562 | 5.6k ohm |
| R110 | 22555332 | 3.3k ohm |
| R111 | 22555182 | 1.8k ohm |
| R112 | 22555820 | 82 ohm |
| R113 | 22555182 | 1.8k ohm, ¼W |
| R114 | 22555224 | 220k ohm |
| R115 | 22555151 | 150 ohm |
| R116 | 22555151 | 150 ohm |
| R117 | 22555104 | 100k ohm |
| R118 | 22555152 | 1.5k ohm |
| R120 | 22545279 | 2.7 ohm, ¼W |
| R121 | 22555331 | 330 ohm, ¼W |
| R201 | 22555102 | 1k ohm |
| R202 | 22658257 | Semi-fixed 1k ohm, B |
| R203 | 22555822 | 8.2k ohm |
| R204 | 22555331 | 330 ohm |

| Symbol No. | Part No. | Description |
|---|---|---|
| R205 | 22555154 | 150k ohm, ¼W TA7323P-0 |
| | 22555104 | 100k ohm, ¼W TA7323P-Y |
| R206 | 22555332 | 3.3k ohm |
| R207 | 22555332 | 3.3k ohm |
| R208 | 22555562 | 5.6k ohm |
| R209 | 22555562 | 5.6k ohm |
| R210 | 22555332 | 3.3k ohm |
| R211 | 22555332 | 3.3k ohm |
| R212 | 22555101 | 100 ohm |
| R301, 302 | 22555820 | 82 ohm |
| R303, 304 | 22555273 | 27k ohm |
| R305, 306 | 22555123 | 12k ohm |
| R307, 308 | 22555151 | 150 ohm |
| R309, 310 | 22555222 | 2.2k ohm |
| R315, 316 | 22555392 | 3.9k ohm |
| R317, 318 | 22555472 | 4.7k ohm |
| R320 | 22555274 | 270k ohm |
| R321 | 22555222 | 2.2k ohm |
| R391, 392 | 22625416 | Variable, 50k ohm, A Tone |
| R393, 394 | 22651505 | Variable, 50k ohm, B Volume |
| R395 | 22625417 | Variable, 50k ohm, B Balance |
| R401, 402 | 22555332 | 3.3k ohm |
| R403, 404 | 22555102 | 1k ohm |
| R405, 406 | 22555682 | 6.8k ohm |
| R407, 408 | 22555472 | 4.7k ohm |
| R409, 410 | 22555473 | 47k ohm |
| R411, 412 | 22555101 | 100 ohm |
| R413, 414 | 22555105 | 1M ohm |
| R415, 416 | 22555563 | 56k ohm |
| R417, 418 | 22555272 | 2.7k ohm |
| R419, 420 | 22555272 | 2.7k ohm |
| R421, 422 | 22555333 | 33k ohm |
| R423, 424 | 22555221 | 220 ohm |
| R425, 426 | 22555122 | 1.2k ohm |
| R427, 428 | 22555103 | 10k ohm |
| R429, 430 | 22555153 | 15k ohm |
| R431 | 22555225 | 2,2M ohm |
| R432 | 22555101 | 100 ohm |
| R433 | 22555182 | 1.8k ohm |
| R434 | 22555330 | 33 ohm |
| R435 | 22555153 | 15k ohm |
| R436 | 22555330 | 33 ohm |
| R437, 438 | 22555474 | 470k ohm |
| R439, 440 | 22555152 | 1.5k ohm |
| R441, 442 | 22555152 | 1.5k ohm |
| R443, 444 | 22555152 | 1.5k ohm |
| R445, 446 | 22555152 | 1.5k ohm |
| R447, 448 | 22555152 | 1.5k ohm |
| R451, 452 | 22555472 | 4.7k ohm |
| R453, 454 | 22555102 | 1k ohm |
| R455, 456 | 22555822 | 8.2k ohm |
| R457 | 22555473 | 47k ohm |
| R458 | 22555273 | 27k ohm |
| R459 | 22555393 | 39k ohm |
| R460 | 22555822 | 8.2k ohm |
| R461 | 22555122 | 1.2k ohm |
| R462 | 22555681 | 680 ohm |
| R463 | 22555122 | 1.2k ohm |
| R464 | 22555221 | 220 ohm |
| R465 | 22555221 | 220 ohm |
| R468 | 22555681 | 680 ohm |
| R901 | 22555221 | 220 ohm |
| R902 | 22555100 | 10 ohm |

## ACCESSORIES

| | | |
|---|---|---|
| | 22902393 | Owner's Manual, TU |
| | 22902352 | Owner's Manual, TE |
| | 22138401 | AC Pack, TE |
| | 22138402 | AC Pack, TU |